

RE-SCHEDULE

KIPS EARLY REGULAR ONLINE+PHYSICAL PREP SESSION

By SAEED MDCAT HUB

KIPS EARLY REGULAR ONLINE+VIRTUAL PREP SESSION						
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Date	Day	Subject	Work	Unit	Topic	
27/03/2021	Saturday	Chemistry	Lecture	1	Fundamental Chemistry	
28/03/2021	Sunday	Biology	Test	1	Cell Structure And Function	
29/03/2021	Monday	Physics	Lecture	1	Force And Motion	
30/03/2021	Tuesday	English	Test	1	Aggrement Mistake,Sentence Completion	
31/03/2021	Wednesday	Chemistry	Lecture	2	Atomic Structure	
01/04/2021	Thursday	Biology	Test	2	Biological Molecules And Enzyme	
02/04/2021	Friday	Physics	Lecture	2	Work And Energy	
03/04/2021	Saturday	English	Test	2	Combination And Miscellaneous Mistake Vocab(1-25)	
04/04/2021	Sunday	Chemistry	Lecture	3	Gases	
05/04/2021	Monday	Biology	Test	3	Bioenergetic, Variety Of Life	
06/04/2021	Tuesday	Physics	Lecture	3	Rotational And Circular Motion	
07/04/2021	Wednesday	English	Test	3	Verb & Tense,Vocab(26-50)	
08/04/2021	Thursday	Chemistry	Lecture	4	Liquid And Solid	
09/04/2021	Friday	Biology	Test	4	Prokaryotes, Protist And Fungi	
10/04/2021	Saturday	Physics English	Lecture	4	Wave	
11/04/2021	Sunday			4	Adjective, Adverb & Vocab(51-75)	
12/04/2021	Monday		Test	4		
13/04/2021	Tuesday	Chemistry	Lecture	5	Chemical Equilibrium	
14/04/2021	Wednesday	Biology	Test	5	Reproduction	
15/04/2021	Thursday	Physics	Lecture	5	Thermodynamics	
16/04/2021	Friday	English	Test	5	Preoposition, Noun & Article	
	Saturday	Chemistry	Lecture	6	Reacrion Kinetics,Thermochemistry & Energetics Of Chemical Reaction	
	Sunday	Biology		6	Plants And Animilia	
			Test			
03/05/2021	Monday	Physics	Lecture	6	Electrostatic	
04/05/2021	Tuesday	English		6	Vocab(76-100) & Pronoun	
05/05/2021	Wednesday		Test			
06/05/2021	Thursday	Chemistry	Lecture	7	Electro Chemistry	
07/05/2021	Friday	Biology	Test	7	Nutrition & Gaseous Exchange	
08/05/2021	Saturday	Physics	Lecture	7	Current Elctricity	
09/05/2021	Sunday	English	Test	7	Vocab(101-125)	
10/05/2021	Monday	Chemistry		8	Chemical Bonding	
11/05/2021	Tuesday	Biology		8	Transport	

12/05/2021	Wednesday	Chemistry		9	S & p Block Elements	
13/05/2021	Thursday	Biology		9	Homeostasis	
17/05/2021	Monday	Physics		8	Electromagnetism	
18/05/2021	Tuesday	English		8	Direct & Indirect	
19/05/2021	Wednesday	Chemistry		10	Transition Elements, Environmental Chemistry	
20/05/2021	Thursday	Biology		10	Support And Movement	
21/05/2021	Friday	Physics		9	Electromagnetic Induction	
22/05/2021	Saturday	English		9	Active And Passive Voice, Vocab(126-150)	
23/05/2021	Sunday	Chemistry		11	Fundamental Principle	
24/05/2021	Monday	Biology		11	Coordination And Control	
25/05/2021	Tuesday	Chemistry		12	Hydrocarbons	
26/05/2021	Wednesday	Biology		12	Variation & Genetics	
27/05/2021	Thursday	Physics		10	Electronics & Modern Physics	
28/05/2021	Friday	English		10	Spellings & Punctuation, Vocab(151-175)	
29/05/2021	Saturday	Chemistry		13	Alkyl Halide, Alcohol And Phenol	
30/05/2021	Sunday	Biology		13	Chromosome & DNA	
31/05/2021	Monday	Physics		11	Atomic Spectra	
01/06/2021	Tuesday	English		11	Phrases & Clauses, Sentence	
02/06/2021	Wednesday	Chemistry		14	Aldehyde And Ketone	
03/06/2021	Thursday	Biology		14	Biotechnology	
04/06/2021	Friday	Physics		12	Nuclear Physics	
05/06/2021	Saturday	English		12	Part Of Speech & Vocab(176-208)	
06/06/2021	Sunday	Chemistry		15	Carboxylic Acid & Macromolecules	
07/06/2021	Monday	Biology		15	Evolution & Ecosystem	
08/06/2021	Tuesday				FLPs -1(1 st Quarter)	
09/06/2021	Wednesday				FLPs -2(2 nd Quarter)	
10/06/2021	Thursday				FLPs -3(3 rd Quarter)	
11/06/2021	Friday				FLPs -4(4 th Quarter)	
12/06/2021	Saturday				Swift	
13/06/2021	Sunday				FLPs -5	
14/06/2021	Monday				FLPs -6	
15/06/2021	Tuesday				FLPs-7	
16/06/2021	Wednesday					

Uploaded Platform

Facebook Page **SAEED MDCAT OFFICIAL**
SAEED MDCAT WHATSAPP GROUP(03418729745)
Website. www.saeedmdcat.com

SESSION DETAILS

1- **NEW LECTURE** 2021 By KIPS(Will be uploaded on Our **SAEED MDCAT OFFICIAL Facebook** Page) On **Lecture Day** According To Schedule

2- Practice Mcqs 30-60 Mcqs per Unit With key And Explanation(Will be uploaded On Lecture Day According To Schedule)

3- Class test(Physical Test.50 Mcqs per unit With Key And Explanation(Will be uploaded On Test Day According To Schedule)

4- Unit wise Test-1 (Online Portal) 30 Mcqs per Unit(Will be uploaded On Test Day According To Schedule)

5- Unit wise test 2 (Virtual Early prep session) 30 Mcqs with key and **Discussion**(Will be uploaded On Test Day According To Schedule)

Regard.SAEED MDCAT HUB

Huzaifa Saeed

Syllabus Topic

Physics

Unit-1

Force And Motion

Displacement

Velocity

Displacement-time graph

Acceleration

Uniform acceleration

Variable acceleration

Graphical representation of acceleration with velocity time graph

Newton's laws of motion

Linear Momentum

Law of conservation of momentumCollision

Elastic collision

Elastic collision in one dimension

Elastic collision in one dimension under different cases

Projectile Motion

Characteristics of projectile motion

Time of flight

Maximum height

Horizontal range

Effect of Air Resistance in Projectile Motion

Unit-2

Work And Energy

Energy

Kinetic energy

Potential energy

Gravitational potential energy

Power

Work Energy Principle

Implications of energy losses in practical devices

Interconversion of kinetic and potential energy.

Unit-3

Rotational And Circular Motion

Angular displacement(Revolution, Degree, Radian)

Angular velocity

Angular Angular acceleration

Relation between linear and angular variables

Relation between linear and angular displacements

Relation between linear and angular velocities

Relation between linear and angular accelerations

Centripetal force (centripetal acceleration)

Unit-4

Wave

Progressive wave

Types of progressive waves(Transverse waves,Longitudinal waves)

Periodic waves(Transverse periodic waves, Longitudinal periodic waves)

Wave motion as illustrated by the vibrations in ropes, springs and ripple tank

Speed of sound in air

Principle of superposition/ superposition of sound waves

Stationary waves/ standing waves

Stationary waves in a stretched string/fundamental frequency and harmonics

Doppler effect

Simple harmonic motion (SHM)

Characteristics of simple harmonic motion

Instantaneous displacement

Vibration

Time period

Frequency and Angular frequency

Simple Pendulum

Energy conservation in SHM

Unit-5

THERMODYNAMICS

First law of thermodynamics

Isothermal process, Adiabatic process, Isobaric process and isochoric processes

Specific heat and Molar specific heat / specific heat capacity

Relation $C_P - C_V = R$

Internal Energy

Heat and Work

Thermodynamic system

Second law of thermodynamics(Lord Kelvin statement)

Unit-6

Electrostatic

Coulomb's Law(Coulomb's law in material media)

Electric field and its intensity
Application of Gauss's law (Electric field intensity due to an infinite sheet of charge, Electric field intensity between two oppositely charged parallel plates)
Electric potential
Capacitor (Capacitance of a capacitor and its unit)
Capacitance of a parallel plate capacitor
Energy Stored in a Capacitor
Combination of capacitors
Charging and Discharging a Capacitor

Unit-7

CURRENT ELECTRICITY

OHM's Law
Electrical resistance
Specific resistance or resistivity
Effect of temperature on resistance (Temperature coefficient of resistance or resistivity)
Internal resistance of a supply
Electric power (Unit of electric power)
Kilowatt-hour
Kirchhoff's Rule (Kirchhoff's current law, Kirchhoff's voltage law)
Potentiometer

UNIT-8

ELECTROMAGNETISM

Magnetic field
Magnetic Flux and Magnetic Flux Density
Force acting on a charged particle in a uniform magnetic field.
Path followed by charge particle magnetic field

UNIT-9

ELECTROMAGNETIC INDUCTION

Electromagnetic induction
Faraday's Law, Application in seismometer
Motional emf
Lenz's Law
Mutual induction (Mutually Induced EMF)
Self-induction
Alternating Current Generator
Transformers

Unit-10

Electronic And Modern Physics

Rectification
PHOTON
The wave nature of particle
Electron microscope
Uncertainty principle
The wave-particle duality
Electron microscope

Uncertainty principle

Unit-11

Atomic Spectra

Atomic Spectra/Line Spectrum

Production of X-rays and Characteristics X-rays

Continuous X-rays (Braking X-rays)

Properties and Uses of X-rays

Unit-12

Nuclear Physics

The atom to include protons, neutrons and electrons.(Atomic Nucleus)

Spontaneous and random nuclear decay/ the Law of Radioactive Decay

Half Life and rate of decay

Biological effects of Radiation

Biological and Medical Uses of Radiation

CHEMISTRY

Unit-1

Fundamentals Chemistry

Atomic mass

Concept of mole

Avogadro's number and V_m

Empirical and Molecular formulae

Stoichiometry

Units of Concentration

Unit-2

Atomic Structure

Discovery of Fundamental Particles

Properties of Fundamental Particles

Charge and e/m ratio of Electron

Rutherford's model of atom (Discovery of Nucleus)

Planck's Theory and Bohr's Model

Spectrum and Hydrogen Spectrum

X-rays and atomic number

Quantum numbers and Shapes of orbitals

Electronic configuration of elements

Unit-3

Gases

Properties of Gases

Gas laws

Boyle's law

Charles's law

Avogadro's law

General gas equation

KMT of gases and interpretation of T

Real and Ideal Gases (Van der Waals Eq)

Unit-4

Liquid And Solid

Properties of liquids

Intermolecular forces (Van DER WAAL's Forces)

Dipole-dipole forces

Dipole-induced dipole forces

London Dispersion Forces

Evaporation, Vapor pressure, Boiling point and external pressure,

Hydrogen Bonding and Physical Properties,

Anomalous behavior of water

Solids

Introduction

Types of solids

Crystalline solids

Solids

Properties of crystalline solids (All)

Crystal lattice

Unit cell

Crystal and their classification

Classification of solids

Ionic solids

Molecular solids

Covalent Solids

Metallic Solids

Unit-5

Chemical Equilibrium

Reversible and irreversible reactions

State of chemical Equilibrium

Equilibrium constant Expression for Important reaction

Applications of equilibrium constant

The Le Chatelier's principle

Applications of chemical equilibrium in industry

Synthesis of ammonia by Haber's Process

Qualitatively the differences in behavior of strong/weak acids and bases

K_a , pK_a , K_b , pK_b , K_w

$[H^+ (aq)]$, $[OH^- (aq)]$, pH and pOH values for strong and weak acids and bases.

Terms: pH

Common Ion Effect

Buffer Solution

Equilibria of slightly soluble ionic compounds
(Solubility product)

Unit-6

Reaction Kinetics

Rate of reaction

Determination of the rate of a chemical reaction

Factors affecting rate of reaction
Specific rate constant or velocity constant
Units of rate constant
Order of reaction and its determination
Explain what is meant by the terms activation energy and activated complex.
Relate the ideas of activation energy and the activated complex to the rate of a reaction
Enzymes
Describe the role of enzyme as biocatalyst

Unit-

THERMOCHEMISTRY AND ENERGETIC OF CHEMICAL REACTION

System, Surrounding and State function
Definitions of terms used in thermodynamics
Standard states and standard enthalpy changes
Energy in chemical reactions
First Law of thermodynamics
Sign of ΔH
Enthalpy of a reaction and its Types
Born-Haber cycle
Hess's law of constant heat summation

Unit-7

Electrochemistry

Oxidative number or state
Oxidative state and balancing of Redox Equations
Balancing of redox equations by ion-electron method
Balancing redox equations by oxidation number change method
Explanation of electrolysis (Predict the Product)
Standard electrode (redox) Potential

- Standard Hydrogen Electrode
- Standard Cell Potential
- Electrode Potential

Electrochemical Series
Application of ECS

Unit-8

Chemical Bonding

Atomic Size
Trends in IE, EA and EN
Energetics of Bond Formation
Energetics of Bond Formation
Types of Bonds
Electrovalent or Ionic Bond
Covalent bond
Co-ordinate or dative Covalent Bond
Shapes of simple molecules
The Valence Shell Electron Pair Repulsion theory
Postulates of VSEPR theory
Applications of VSEPR theory

Sigma and Pi bond
Hybridization
sp³ - Hybridization
sp² - Hybridization
sp - Hybridization
Bond Energy
Bond Length
Ionic character of covalent bond (Dipole Moment)

Unit-9

S and P Block Elements

a. Atomic Sizes
b. Atomic Radius
c. Ionic Radius
d. Ionization Energy
e. Electronegativity
f. Electron Affinity
electropositivity or metallic character, melting
and boiling points , electrical conductivity
Group 2 Elements (Alkaline earth metals), Trends in reactivity
Reactions of Group IA with Water, Oxygen and Chlorine
Group 1 Elements (Alkali Metals), Trends in reactivity
Reactions of Group IIA with Water, Oxygen and Nitrogen
Reactions of Period 3 Elements with Water , Oxygen and
Chlorine

Unit-10

Transition Elements

General characteristics (All)
Describe electronic structure of elements and ions of d-Block
Element
Chemistry of Transition Elements of 3d series:
a. Electronic Configuration
b. Variable Oxidation states
c. Uses as a Catalyst
d. Formation of Complexes
e. Colour of Transition Metal Complexes
Complexes Important Terminologies
Nomenclature
Air Pollutants.
Chemistry and causes of Acid Rain.
Ozone and Chlorofluorocarbons (CFCs).

Unit-11

Fundamentals Concept Of Organic Chemistry

Classification of organic compounds
Isomerism
Functional Group
Nomenclature of organic compounds (All Families)

Unit-12

Hydrocarbons

Define free radical initiation, propagation and termination.

(Remembering)

Describe the mechanism of free radical substitution in alkanes exemplified by methane and ethane. (Understanding)

Describe the structure and reactivity of alkenes as exemplified by ethene.

Explain dehydration of alcohols and dehydrohalogenation of RX for the preparation of ethene.

Use the IUPAC naming system for alkynes.

Compare the reactivity of alkynes with alkanes, alkenes and arenes.

Discuss the shape of alkynes in terms of sigma and pi C-C bonds.

Describe the preparation of alkynes using elimination reactions.

Describe acidity of alkynes.

Discuss chemistry of alkynes by hydrogenation, hydrohalogenation, hydration.

Describe and differentiate between substitution and addition reactions

Benzene: Properties, Structure, Modern representation, Reactions, Resonance method, Electrophilic substitution,

The molecular orbital treatment of benzene

Describe addition reactions of benzene and methyl benzene.

Describe the mechanism of electrophilic substitution in benzene.

Unit-13

Alkyl Halide ,Alcohol and Phenol

Classification of alkyl halides

Nomenclature

Discuss Structure and Reactivity of Alkyl Halides

Mechanism of nucleophilic substitution reaction SN1, SN2, E1 and E2 reaction

Classification: Primary, secondary and tertiary alcohols

Nomenclature

Reactivity

Phenols:

Physical properties

Nomenclature

Acidity

Reactivity

Differentiate between alcohol and phenol

Unit-14

Aldehyde And ketone

Explain nomenclature and structure of aldehydes and ketones.

Discuss the preparation of aldehydes and ketones

Describe reactivity of aldehydes and ketones and their comparison. Describe acid and base catalyzed nucleophilic

addition reactions of aldehydes and ketones.

Discuss the chemistry of aldehydes and ketones by their reduction to alcohols.

Describe oxidation reactions of aldehydes and ketones.

Unit-15

Carboxylic Acid and Macromolecules

Nomenclature

Classification

Physical properties

Preparations of carboxylic acids

Reactivity

Describe the chemistry of carboxylic acids by conversion to carboxylic acid derivatives: acyl halides, acid anhydrides, esters, amides and reactions involving interconversion of these.

Acidic Strength

Order of reactivity of derivatives

Explain the basis of classification and structure-function relationship of proteins.

Describe the role of various proteins in maintaining body functions and their nutritional importance.

Describe the role of enzymes as biocatalysts.

BIOLOGY

Unit-1

Cell Structure And Function

Structure of A Generalized Cell

Comparison Between Typical Plant and Animal Cell

Cell wall

Plasma Membrane

Cytoplasm

Ribosomes

Endoplasmic reticulum

Golgi apparatus

Lysosome

Peroxisome and Glyoxysome

Vacuoles

Mitochondria

Plastids

Nucleus

Comparison Between Prokaryotic and Eukaryotic cells

Unit-2

Biological Molecules And Enzyme

Introduction to biological molecules

Importance of Water
Carbohydrates
Proteins
Lipids
Nucleic acids
Conjugated molecules
Introduction of Enzymes
Characteristics of enzymes
Mechanism of enzyme action (Models)
Factors effecting rate of enzyme action
Enzyme inhibition
Feedback inhibition

Unit-3

Bioenergetics And Variety Of Life

Photosynthesis
Role of light and photosynthetic pigments
Role of water and CO₂
Light dependent reactions (Production of ATP
via ETC/Chemiosmosis)
Light independent reaction
Cellular respiration (Aerobic and Anaerobic Reactions)
Glycolysis
Pyruvic acid oxidation, Kerbs cycle
Respiratory chain and Oxidative phosphorylation
Discovery of viruses
Structure of viruses
Classification of viruses
Bacteriophages (Structure and Life Cycle)
Viral diseases
HIV

Unit-4

Prokaryotes,protists and fungi

Bacteria (Size and Shape)
Bacterial Cell Structures
Nutrition in bacter
Respiration in bacteria
Reproduction in bacteria
Importance and control of bacteria
Cyanobacteria
Introduction
Protozoa
Algae
Fungi like Protists

Unit-5

Plante And Animilia

Introduction and dignostic features of Plants
Classification of Plants

Introduction, grade radiata, grade bilateria
Diploblastic and triploblastic organization
Classification according to coelom (body cavity)
Protostomes, deuterostomes
Invertebrate Phyla
Vertebrata

Unit-6

Nutrition And Gaseous Exchange

Modes of nutrition
Mineral Nutrition in Plants with Deficiency Symptoms
Carnivorous plants
Human Digestive system
Digestion in Oral Cavity
Digestion in Stomach
Digestion in Small Intestine and Accessory Glands
Digestion in Large intestine
Disorders of digestive tract
Gaseous exchange in plants
Role and Structure of Stomata
Human respiratory system
Mechanism of Breathing
Transport of Respiratory Gases and Respiratory Pigments
Lung capacities
Respiratory Disorders

Unit-7

Transport

Uptake and transport of minerals and water
Uptake of Water by roots
Water Potential
Ascent of sap
Transpiration and factors Affecting it
Translocation of organic solutes
Blood circulatory system (Blood)
Structure of Human Heart
Blood Vessels
Blood Pressure and Rate of Blood flow
Lymphatic system
Immune system

Unit-8

Homeostasis

Mechanism of Homeostasis (Receptors, Control center, Effectors)
Homeostatic Feedback Mechanisms
Osmoregulation
Osmoregulation in animals of different environment
Nitrogen containing excretory products
Excretory System of Human

Structure and Functions of Kidney

Nephron

Renal Disorders

Classification of Animals based on Thermoregulation

Thermoregulation in Human

Unit-9

Support And Movement

Human Skeleton (Bone and Cartilage)

Axial Skeleton

Appendicular Skeleton

Disorder of Human Skeleton

Bone Fractures

Joints

Joint Injuries

Comparison of Muscles Types

Structure and Ultra-structure of Skeletal Muscles

Sliding Filament Model and Energy for Muscle Contraction

Muscles Disorders

Unit-10

Coordination And Control

Steps involved in Nervous Coordination

Sensory Receptors and Their Working

Neurons (Structure and Types)

Reflex Action and Reflex Arc

Nerve Impulse

Synapse

Central Nervous System

Peripheral Nervous System

Nervous Disorders

Hormones- The chemical Messengers

Endocrine System of Man (Hypothalamus)

Pituitary Gland

Thyroid Gland

Parathyroid Gland

Pancreas

Adrenal Glands

Gonads

Hormonal Feedback Mechanism

Unit-11

Reproduction

Male Reproductive System

Female Reproductive System

Menstrual cycle

Sexually Transmitted Diseases

Unit-12

Variations And Genetics

Basic Terms

Mendelian Inheritance
Law of Segregation
Law of independent assortment
Dominance Relations
Multiple Alleles (ABO blood group System)
Rh Blood group system
Maternal foetal Rh incompatibility
Epistasis and Bombay Phenotype
Polygenic Inheritance
Gene linkages and crossing over
Recombination Frequency and Genetic Map of Chromosome
Patterns of sex determinations
Sex Linkage in Drosophila
Sex Linkage in Humans (Hemophilia and Color blindness)

Unit-13

Chromosome And DNA

Chromosomes (Number, Structure, Composition and Organization)
Chromosomal theory of inheritance
Concept of gene
DNA as heredity material
Model of DNA replication
Meselson-Stahl's Experiment
Process of DNA Replication
Central dogma of gene expression
Transcription
Genetic code
Translation
Mutation

Unit-14

Biotechnology

Recombinant DNA technology
Polymerase Chain Reaction
Genomic Library
DNA Sequencing
DNA Analysis
Transgenic Organisms
Tissue Culture
Biotechnology and healthcare (Gene Therapy)

Unit-15

Evolution And Ecosystem

Food chain, Food web, energy flow
Succession,
Symbiosis (Mutualism, Commensalism, Parasitism, Predation)
Biogeochemical Cycle (N2 Cycle)
Human Impacts on Environment
Acid Rain

Greenhouse effect

Ozone depletion

Algal blooms

Concepts of Evolution

Evolution of eukaryotes from prokaryotes

Lamarckism

Darwinism

Evidences of Evolution